CLAIMS

We claim

1. A method of treating an excessive immune response including an aberrant/enhanced Th1 response comprising administering a helminthic parasite preparation in an amount sufficient to reduce the excessive immune response.

2. The method of claim 1 wherein the helminthic parasite preparation comprises a parasite selected from the group consisting of parasite, parasite extract, parasite eggs, parasite egg extract, parasite larvae, parasite larvae extract, parasite cercariae and parasite cercariae extract.

3. The method of claim 1 wherein the helminthic parasite preparation comprises a parasite selected from the group consisting of helminths that naturally colonize humans and helminths that colonize animals but protect humans.

4. The method of claim 1 wherein the helminth parasite preparation comprises a parasite which is a nematode.

5. The method of claim 4 wherein the helminth parasite preparation comprises a parasite selected from the group consisting of *Ascaris lumbricoides*, *Enterobius vermicularis, Trichuris trichiura*, *Trichuris suis, Ancylostoma duodenale* and *Necator americanus*, *Strongyloides stercoralis and Trichinella spiralis*.

6. The method of claim 3 wherein the helminthic parasite preparation comprises a parasite which is a platyhelminth.

7. The method of claim 6 wherein the helminth parasite preparation comprises a parasite selected from the group consisting of trematodes and ceptodes.

8. The method of claim 7 wherein the helminthic parasite preparation comprises a parasite selected from the group consisting of *Fasciolopsis*, *Echinostoma* and *Heterophyes* species, *Clonorchis sinensis*, *Opisthorchis viverrini, Opisthorchis felineus*, *Fasciola hepatica, Schistosoma* species, *Diphyllobothrium* species, *Taenia saginata*, *Taenia solium* and *Hymenolepsis nana*.

9. The method of claim 1 wherein the helminthic parasite preparation comprises a parasite selected from the group consisting of filarial parasites and lung flukes.

10. The method of claim 3 wherein the helminthic parasite preparation comprises a parasite selected from the group consisting of *Trichuris muris*, *Trichinella spiralis*, *Nippostrongylus prasiliensis, Heligmonsomoides polygyrus, Hymenolepsis nanan, Angiostrongylus* species, *Whipworm, Ascaris suum, Trichuris vulpis, Toxocara* species, *Gnathostoma species, Ancylostoma* species, *Anisakis* species and *Pseudoterranova species.*

11. A method of preventing or treating an autoimmune disease in an individual comprising administering a helminthic parasite preparation in an amount sufficient to prevent or treat the autoimmune disease in an individual.

12. The method of claim 11 wherein said autoimmune disease is multiple sclerosis.

13. A method of treating inflammatory bowel disease comprising administering a helminthic parasite preparation in an amount sufficient to reduce inflammatory bowel disease.

14. The method of claim 13 wherein said inflammatory bowel disease is selected from the group consisting of Crohn's disease and ulcerative colitis.

15. The method of vaccinating an individual against a disease involving an excessive immune response comprising administering a helminthic parasite preparation in an amount sufficient to prevent said excessive immune response.

16. The method of any one of claims 11, 13 or 15 wherein said helminthic parasite preparation is selected from the group consisting of parasite, parasite extract, parasite eggs, parasite egg extract, parasite larvae, parasite larvae extract, parasite cercariae and parasite cercariae extract.

17. A pharmaceutical composition comprising a helminthic parasite preparation, and a pharmaceutically acceptable carrier.

18. The composition of claim 17 wherein the helminthic parasite preparation is selected from the group consisting of parasite, parasite extract, parasite eggs, parasite egg extract, parasite larvae and parasite cercariae.

19. A method of producing a helminthic parasite preparation comprising isolating a helminthic parasite from the stool of a mammal housed in a specific pathogen-free environment, and formulating a pharmaceutical composition comprising said parasite and a pharmaceutically acceptable carrier.

20. A method of producing a helminthic parasite preparation comprising isolating a helminthic parasite from animal or plant tissue, or soil in a pathogen-free environment, and formulating a pharmaceutical composition comprising said parasite and a pharmaceutically acceptable carrier.

21. A method of treating a disease involving increased infiltration of inflammatory cells into the CNS by decreasing the number of inflammatory cells infiltrating the CNS, the method comprising administering to a mammal a helminthic parasite preparation in an amount sufficient to decrease the number of inflammatory cells in the CNS.

22. A method of treating an autoimmune disease by inducing Th2 cytokines, the method comprising administering to a mammal a helminthic parasite preparation in an amount sufficient to induce one or more Th2 cytokines.

23. A method of treating a disease involving increased Th1-type cytokine levels, such method comprising administering a helminthic parasite preparation in an amount sufficient to reduce the levels of Th1 type cytokines.

24. A method of screening a helminthic parasite preparation for one or more components that reduce an excessive Th1 immune response, said method comprising the step of assaying a fraction of a helminthic parasite preparation to detect biological activity that reduces an excessive Th1 immune response.

25. The method of claim 24, further comprising, prior to the assaying step, the steps of:

i) preparing a helminthic parasite preparation; and

ii) fractionating said helminthic parasite preparation.

26. The method of claim 24 wherein a fraction containing one or more components that reduce an excessive Th1 immune response is subjected to the further step of fractionating and assaying to identify a sub-fraction containing one or more components that reduce an excessive Th1 immune response.

27. The method of claim 26 wherein said further step of fractionating and assaying the resulting sub fractions is repeated at least once.

28. The method of claim 24 wherein said helminthic parasite preparation is prepared from one of the group consisting of: helminthic parasite eggs; larvae; cercariae; and adult worms.

29. The method of claim 25 wherein said fractionating is performed using one or more chromatographic separation techniques.

30. The method of claim 29 wherein said one or more chromatographic separation techniques are selected from the group consisting of: column chromatography; HPLC; FPLC; matrix-affinity chromatography; reverse-phase chromatography; and electrophoretic separation.

31. The method of claim 24 wherein said assaying comprises an *in vitro* assay.

32. The method of claim 24 wherein said assaying comprises an *in vivo* assay.